ABSTRACT

Title of Thesis: INVESTIGATING THE 'STICKINESS' OF STIGMA FOLLOWING A FRIEND'S POLICE CONTACT

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The consequences of police contact for youth have been established in the prior literature (e.g., Kirk & Sampson, 2013), yet the potential for guilt by association after police contact has not been thoroughly explored. The current study examines how a youth's police contact may increase the likelihood of a friend's police contact after controlling for behavior and other characteristics that are associated with justice system involvement. This study expands upon labeling theory and the concept of "stickiness" by testing whether guilt by association could act as a status characteristic that is "sticky" in two ways. Using longitudinal data from a sample of rural youth, I find that a friend's police contact is associated with an increase in the likelihood of one's own contact after accounting for other predictors of police contact. Thus, this study provides additional evidence that police contact may be harmful for youth and their social network.

INVESTIGATING THE 'STICKINESS' OF STIGMA FOLLOWING A FRIEND'S POLICE CONTACT

by

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Dedication

This thesis is dedicated to my friends and family without whom this thesis would not be possible and to my mother, who has always supported and guided me.

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Chapter 1: Introduction

Police are omnipresent in the lives of many youth. They patrol their schools and neighborhoods and may be encouraged to intervene in minor behavior problems in order to prevent more serious delinquency. Accordingly, many adolescents are in contact with the police. One study estimates that between 16 and 27 percent of youth are arrested before the age of 18 (Brame et al., 2012). A high prevalence of police contact in adolescence is problematic because prior research finds it is associated with negative outcomes for the individual who experiences it (e.g., Geller & Fagan, 2019; Kirk and Sampson 2013; Wiley, Slocum, & Esbensen, 2013) and for members of their social network (Comfort 2007; Turney and Wildeman 2013). Most research on the consequences of justice contact for an individual's social network has focused on the effects of criminal justice contact on one's family (e.g., Braman, 2014; Jacobsen, 2019; Porter & King, 2015; Roettger & Swisher, 2011; Siennick, Stewart, & Staff, 2014; Turney, 2015; Wakefield & Wildeman, 2013). The goal of this study is to move beyond family relationships to examine a potential consequence for friendships. In particular, I examine the extent to which the police contact of an adolescent's friend is associated with the adolescent's own risk of police contact. To accomplish this, I focus on rural youth. Although this association between a friend's police contact and one's own police contact is expected to happen in urban areas as well, residents of rural communities generally have strong social ties with each other (e.g., Beggs, Haines, & Hurlbert, 1996; Crockett, Shanahan, & Jackson-Newsom, 2000; Fischer, 1982; Hofferth & Iceland, 1998; Marsden &

Srivastava, 2012), and relationships between youth are more likely to be known to the police. Such close social ties means that rural communities are a good context in which to study this phenomenon.

A peer's recent police contact may increase the risk of an adolescent's own police contact because of their affiliation with others who have been involved in the justice system (McAra & McVie, 2005; Rocheleau & Chavez, 2015). This may occur through "guilt by association," which refers to the transfer of stigma from a justice-involved individual to a member of their social network (Goffman, 1963). If police surveil those with whom they have had prior contact, then they may be more likely to pick up youth whose friends have been in their contact recently. This is because of the transfer of stigma from those who have been socially stigmatized to those with whom they associate (Goffman, 1963; Pryor, Reeder, & Monroe, 2012). Research into police surveillance suggests that police monitor those with whom they have had previous contact (e.g., Meehan, 1993) by using the information they have about the social networks of their communities. Thus, the first research question of this thesis asks whether a friend's police contact changes the likelihood of future police contact independently of one's behavior. Given the prior literature, the current study hypothesizes that a friend's recent police contact will increase the likelihood of future police contact independent of one's behavior.

If associating with someone who has had previous police contact increases the likelihood of one's own police contact, then some youth may dissolve their ties with friends that have recently experienced police contact in an effort to avoid their own contact. Indeed, prior research suggests that adolescents may withdraw

from or avoid peers who have been punished (Jacobsen, 2018; Zhang, 1994). Thus, the second research question of this thesis asks whether dissolving a friendship tie with someone with recent police contact moderates any changes in the likelihood of police contact from guilt by association. This study hypothesizes that dissolving a friendship tie with someone who has experienced recent police contact will reduce the likelihood of one's own police contact. However, if dissolving the tie with a friend who experienced police contact does not mitigate the association between the friend's police contact and the adolescent's own risk of contact, then the stigma of a friend's justice system contact may stay with an individual despite their efforts to avoid the "wrong crowd."

In this thesis, I also develop the concept of "stickiness," as it has been used in prior research. Stigma is "sticky" when it either transfers from one person to another (Braman, 2014; Uggen & Blahnik, 2016) or lasts a long time (Warr, 1993). The current study investigates whether the stigma of a friend's police contact is "sticky" in both of these ways. First, if the stigma associated with one's police contact transfers to their friends, then it could be said that that stigma sticks, meaning it is transmitted, from one individual to another. Second, if dissolving the friendship tie with this friend does not moderate this guilt by association effect, then it is possible that the stigma of having a friend who has had recent police contact sticks with the individual regardless of whether that friendship still exists, suggesting it stays with a person over time. To address these research questions, I will use survey data from youth in 27 rural school districts followed through middle and high school. My analyses also shed light on the processes by which justice involvement impacts a youth's friendship network.

Chapter 2: Literature Review

Overview of Adolescent Police Contact

Arrest during adolescence has been declining in the United States over the past decade, but many youth still experience police contact before adulthood (Brame et al., 2012); for example, more than a million youth under the age of 18 were arrested in 2014 (Bureau of Justice Statistics, 2014). Over 25,000 youth were arrested at some point in 2017 in nonmetropolitan areas alone (Federal Bureau of Investigation, 2018). This may be driven by the fact that youth are heavily exposed to police contact throughout their daily lives. For example, the reliance on police in schools has increased significantly over the past couple of decades (Theriot, 2009). However, the bulk of the attention has been on urban areas (e.g., Kirk & Sampson, 2013; Wiley, Slocum, & Esbensen, 2013), which leaves an important gap in understanding how youth are policed in the United States.

Although these instances of juvenile arrest are relatively common, police contact can be a detrimental point in an adolescent's life. For example, police contact in adolescence predicts involvement in future deviant behavior (Johnson, Simons, & Conger, 2004; McAra & McVie, 2007; Thurau, 2009; Wiley, Slocum, & Esbensen, 2013) and may also increase the likelihood of subsequent justice system involvement independent of one's behavior (Beardslee et al., 2019; Liberman, Kirk, & Kim, 2014). Lastly, experiencing an arrest as a juvenile can also negatively affect educational attainment (Hirschfield, 2009; Kirk & Sampson, 2012; Sweeten, 2006) and future health outcomes (McFarland, Geller,

& McFarland, 2019; Tolou-Shams et al., 2007). The goal of police-youth contact is to prevent future deviant behavior, but arrest during adolescence can actually have negative consequences throughout one's life, which may induce justice system involvement in the future. Because institutional resources are already scarce in rural areas (e.g., Roscigno & Crowley, 2001), these consequences are particularly salient for youth in non-metropolitan settings.

The individual who experiences police contact is not the only one to endure its consequences. Vicarious police contact, or police contact that an individual's friend or family member experiences, has detrimental consequences on one's view of the police (Easton & Dennis, 1969; Geller & Fagan, 2019), and may be more influential than one's personal contact (Rosenbaum et al., 2005). Vicarious police contact is also associated with other negative outcomes such as declines in future health (McFarland, Geller, & McFarland, 2019) and educational achievement (Gottlieb & Wilson, 2019). Thus, vicarious contact is important to consider when investigating the dynamics of police-youth interactions. Vicarious police contact could also be detrimental in that youth who have had a friend picked up by police may be more likely to experience their own police contact and the negative outcomes associated with it.

Given its prevalence in adolescents' lives and the impact on one's likelihood of future justice system contact, education, and health, it is important to consider the many factors that may increase the likelihood of police contact. While one's behavior should be the only way that youth experience contact with the justice system, labeling theory in criminology suggests that other factors can predispose someone to police contact, including other characteristics of the youth

and members of their social network (e.g., Crutchfield et al., 2009; Paternoster & Iovanni, 1989). Consistent with this status characteristics hypothesis, prior research suggests that adolescents are policed differently based on their own social characteristics (Brunson & Miller, 2006; Dannefer & Schutt, 1982; Bass, 2001) and the characteristics of the people in their social networks (e.g., Crutchfield et al., 2009). For example, demographic characteristics such as race, gender, and socioeconomic status are associated with an increased probability of arrest and the perception that one is being watched and targeted by the police (for race: Fine et al., 2003; Gaston, 2019; Kochel, Wilson, & Mastrofski, 2011; Lurigio, Greenleaf, & Flexon, 2009; Ruck et al., 2008; for gender: Brunson & Miller, 2006; for socioeconomic status: McAra & McVie, 2005; Sampson, 1986).

Status characteristics such as race and class are important to study in a rural setting, despite the misconception that rural areas are homogenous. Although these areas may be more segregated than urban areas, non-White individuals still live in rural areas (Lichter, 2007). Additionally, prior studies have suggested that socioeconomic status may influence one's likelihood of police contact in rural and urban areas (Liederbach, 2007; Sampson, 1986). Those of higher socioeconomic statuses may look down upon those of lower socioeconomic statuses within rural communities. This divide may be so prevalent that any negative action by the upper-class "saints" will be ignored while the lower-class "roughnecks" are closely scrutinized (Chambliss, 1973), perhaps because they may not conform to the social rules dictated by the middle class (Becker, 1963). Thus, socioeconomic status may be an important factor to consider when assessing the relationship between a friend's police contact and one's own. Perhaps youth of lower

socioeconomic status are surveilled more than their upper-class counterparts in rural areas because of the prejudices surrounding morality and socioeconomic status.

Other characteristics or behaviors such as bonds to school (Kirk, 2009), parental supervision (Patterson, Crosby, & Vuchinich, 1992), or one's attitudes that may or may not be related to one's actual behavior may also increase the likelihood of police contact (e.g., for deviant attitudes: Snyder, Dishion, & Patterson, 1986; for sensation seeking: White, Labouvie, & Bates, 1985). While most research on the status characteristic hypothesis focuses on race, sex, and socioeconomic status, one status characteristic that may be associated with an increase in the likelihood of justice involvement is an affiliation with someone who has previously been justice-involved. Because receiving a delinquent or criminal label may increase an adolescent's likelihood of future arrest regardless of their own behavior (Liberman, Kirk, & Kim, 2014), the likelihood of future police contact could be affected by a friend's recent police contact through acquiring this label. Thus, a friend's police contact may be an additional status characteristic that heightens an adolescent's own likelihood of apprehension.

Guilt by Association and Surveillance

My first research question asks whether youth who have had a friend with recent police contact will experience an increased likelihood of their own police contact. Prior literature has established that youth have a higher chance of arrest when they have delinquent friends (Morash, 1984). One possible mechanism of this outcome is that early contact with the system increases involvement with

deviant peers (Bernburg, Krohn, & Rivera, 2006), which may increase one's propensity towards delinquency (Haynie, 2001; McGloin, 2009; Warr and Stafford, 1991). Thus, youth who have friends who have experienced police contact may simply be more likely to come into police contact through their own delinquent behavior. However, selection into delinquent peer groups is not the only way in which peers could increase one's own likelihood of being arrested. Prior evidence suggests that the stigma associated with a friend's police contact could transfer from one individual to another.

Stigma Transfer and Surveillance: As Goffman (1963) explains, the stigma from one individual's negative behavior is passed on to the other members of their social group, which is known as guilt by association. Research in social psychology shows that people transfer the information which they learn about a person onto the people who are affiliated with that individual (Molet et al., 2013). This phenomenon applies to stigmatization from justice system involvement as well. The stigmatization of a family member's justice system involvement is not only felt by the individual; it may also affect one's own likelihood of punishment. Prior work introduced the idea that the stigma of punishment could transfer from one individual to another. For example, family members of those who have been incarcerated feel stigmatized by that relationship and believe that they need to hide that information from others (Braman, 2004). Additionally, youth who experience parental incarceration are more likely to be punished in school than their peers, regardless of their behavior (Jacobsen, 2019). One possible explanation for this outcome is that the stigma of a parent's incarceration is transmitted to the child and, subsequently, their teachers surveil them more than

they do other students. Prior research in this area primarily focuses on the consequences of incarceration for other family members (e.g., Braman, 2004; Jacobsen, 2019; Mears & Sienneck, 2015; Roettger & Swisher, 2011; Wildeman, 2014), so this study contributes to the literature by expanding on this research into the stigma associated with a friend's recent police contact. This focus on friendship is important because of the increasing importance of friendship during adolescence (Warr, 1993). At this age, youth become more independent from their parents and begin to spend an increasing share of their time with friends (e.g., Perry, Kelder, & Komro, 1993). Youth may then be more likely to be seen with their friends by police than with their siblings or parents. Thus, the transfer of stigma between friends may be equally or more salient than the transfer of parental stigma for adolescents.

This stigma transfer may be even more likely between friends considering the prevalence of group-based delinquency among adolescents. Youth perceive themselves to be very similar to their friends, particularly if the friendship is reciprocal (Linden-Andersen, Markiewicz, and Doyle, 2009). In addition to perceiving themselves as similar to their friends, youth will also engage in similar levels of delinquent behavior as their reciprocal friends (Tolson & Urberg, 1993). The prior literature has established that adolescents are much more likely to commit delinquency in groups than they are alone and that youth who commit delinquent acts are more likely to have friends who also are engaged in delinquency (Hindelang, 1976; Osgood et al., 2013; Thornberry, Bjerregaard, & Miles, 1993; Warr, 1993). Because of these patterns in friendship selection and group behavior, police may be suspicious about instances in which youth are

gathered in groups, especially if they are engaged in unstructured activities without adults around, a phenomenon known in criminology as unstructured socializing (Osgood et al., 1996). For example, Liederbach (2007) found that police in small towns feel the need to monitor areas in which youth are loitering.

Another potential reason for this heightened risk is that youth who have friends who have had police contact may be assumed to be delinquent by the police and surveilled more regardless of their actual behavior. Police officers may use the similarity between friends and prevalence of group delinquency to inform whom they consider to be delinquent. Thus, youth may be assumed to be delinquent if they are in the company of those who fit the stereotype of someone engaged in delinquency or if they spend time with peers who are known to have engaged in delinquency. For example, if White youth are seen with Black youth, their likelihood of police encounters may increase independently of behavior (Brunson & Weitzer, 2009). Police also have been shown to believe that being in a gang or having friends who are engaged in illegal activity leads to one's own delinquent behavior (McAra & McVie, 2005; Miller, 1975; Ralphs, Medina, & Aldridge, 2009). This is additionally supported by evidence stating that some parents tell their children to avoid police contact by not congregating in groups (Brunson & Weitzer, 2011), which suggests this phenomenon is commonly known enough to induce changes in behavior. Accordingly, police officers may become more suspicious or be more likely to surveil friends of youth with whom they have already had contact.

Research regarding the policing of gangs demonstrates the use of one's social network by police for the purpose of surveillance. For example, police use

social media to gain access to gang members' friends and their activities (Behrman, 2015), which assists them in surveilling those who interact with gang members (Durán, 2009; Ralphs, Medina, & Aldridge, 2009). Police will also use information on co-arrestees to gather information for the surveillance of others in their social network. An individual may be added to a "heat list" if someone they associate with comes to police attention, even if that person's interaction with the police did not involve a crime (Ferguson, 2017). This type of surveillance may be facilitated by given the tight-knit nature of rural communities. Within the dense social networks of rural areas (e.g., Beggs, Haines, & Hurlbert, 1996; Crockett, Shanahan, & Jackson-Newsom, 2000), police may be more likely to know the friends of someone who they have had contact with before (not just those who were with them at the time of contact) and use that information to surveil friends of those they have apprehended recently.

Adolescents may be more likely to be surveilled if their friends have had recent justice system contact. Those who have had previous involvement in the justice system are subject to greater surveillance than those who have not had justice involvement. For example, some jurisdictions create specific police units to monitor individuals with extensive criminal records (Martin & Sherman, 1986). If an officer is closely monitoring someone who has previously been arrested, they may also be monitoring their friends. Goffman predicted as much in his original work on stigma, stating that police may arrest someone based on suspicion for associating with someone they have arrested previously (1963, p. 47). Qualitative studies of police officers suggest that officers may surveil those who associate with people they have previously arrested. An analysis of police

investigatory tools provides examples of British police surveilling those who are friends with individuals they have arrested previously (Meehan, 1993). Additionally, police sometimes use a youth's friends as informants against them, providing further evidence that knowledge of one's friends is important information for the police (Dodge, 2006). If an adolescent is surveilled more because they are friends with someone who has been in contact with police recently, then their likelihood of contact may increase relative to someone who is engaged in the same behavior but does not have justice-involved friends.

In rural areas, guilt by association may occur following vicarious police contact due to several key characteristics of rural communities. First, rural communities are often characterized by cultural homogeneity with a strong emphasis on moral capital. Moral capital is based on the idea that those of lower socioeconomic status in rural neighborhoods divide themselves into those with high moral standards (i.e., not participating in illegal activities) and those of low moral standards. Drug dealing, for example, is associated with low morality and is generally not justified as a means to earn needed money (Sherman, 2006). Thus, police in rural areas may be more attuned to deviant behavior from adolescents because of the cultural emphasis on morality. Second, the intimacy between the police and citizens in rural areas could give the police extra information about citizens that they would not normally have in larger cities. Police may be more likely to know who an adolescents' friends are and whether they have experienced police contact because of this familiarity (Chambers, 2001; Weisheit, Wells, and Falcone, 1994). Third, rural officers exhibit a desire for "real" police work similar to urban police, which may result in formal sanctioning (Weisheit, Falcone, and

Wells, 2006). The overlap between a police officer's duty to prevent crime and the possibility that rural police are familiar with one's social group suggests that rural police have the ability and motivation to use their knowledge about the friends of those they have had recent contact with to aid in their efforts to prevent delinquency. Thus, a rural setting is beneficial for studying whether guilt by association occurs in the relationship between a friend's police contact and one's own.

Stickiness: Given the prior evidence of the surveillance of those associated with someone who has had prior justice system contact, the stigma of a friend's police contact could be referred to as "sticky" because the individual is now subject to surveillance from the police even if they have not had their own police contact. The prior literature on stigma speaks to this idea of "sticky stigma" in that those who have family members who have been incarcerated feel stigmatized by their family member's justice system contact (Braman, 2004), but it is currently unclear if this stigma actually increases the likelihood of justice system contact. Prior research has focused on the effects of parental incarceration on punishment (e.g., Jacobsen, 2019), but little is known about the effects of a friend's justice involvement on one's own punishment. This stickiness is important to assess as the relationships between youth and their friends become more important than the relationships between youth and their parents during adolescence (i.e., Perry, Kelder, & Kromo, 1993). If the stigma of police contact is sticky and influences one's likelihood of surveillance, then youth who are friends with a peer who has experienced police contact may be subject to police contact they would not normally have been exposed to.

Friendship Dissolution as a Response to a Friend's Police Contact

My second research question asks whether dissolving ties with a friend who has been recently picked up by police mitigates the guilt by association effect. Individuals who have experienced justice system contact or are close with someone who has may avoid institutions or people that may increase their likelihood of future police contact. Given the rise in surveillance of individuals who have been involved in the justice system (Brayne, 2014), these strategies may be undertaken in order to avoid further police surveillance. Individuals with previous police contact have demonstrated avoidance of public institutions such as hospitals and schools due to fear of police detection in those settings (Brayne, 2014; Goffman, 2009; Haskins & Jacobsen, 2017). Some adolescents have reported that refraining from delinquent behavior is not enough to avoid police contact, so they take other measures to avoid arrest (Futterman, Hunt, & Kalven, 2016; Weitzer & Brunson, 2009). One strategy to avoid police contact may be to associate with those not likely to be viewed as delinquent. For example, one strategy boys may use to avoid police attention is to walk outside with girls rather than with other boys (Shedd, 2015). For those with previous police contact, friends become a potential liability that could get them re-involved in the justice system because police may use them to gain information (Goffman, 2009). This could be particularly true in rural areas where one's friendships could be known by police.

Youth without prior involvement with the justice system may also view their justice-involved friends as a pathway by which they could become involved in the justice system. Thus, youth may dissolve friendship ties with someone who

has been recently arrested because they believe that those friendships may increase their own likelihood of police contact. Prior studies have shown that youth who have been sanctioned in school or arrested are rejected by their non-sanctioned friends (for arrest: Jacobsen et al., 2018; for school punishment: Jacobsen, 2020; Zhang, 1994). These findings are consistent with the early stigma literature that suggests those who have not been labeled as deviant may isolate themselves from those who have (Goffman, 1963; Lemert, 1967). What is unknown is whether dissolving these friendship ties actually succeeds in decreasing any of the effects of any guilt by association that occurs after a friend experiences police contact. No longer associating with someone who has experienced police contact should end an individual's police surveillance. However, police may continue to associate those who have had friends with police contact with those friends even if the friendship has ended. Given what we know about police surveillance and the emphasis that police place on an arrested individual's friendships (e.g., Dodge, 2006), the police may continue to surveil the friend of someone they have previously been in contact with even if the friendship between the two individuals no longer exists. Thus, I assess the extent to which the association between a youth's police contact and the police contact of their friend is moderated by the dissolution of the friendship tie.

Friendship Dissolution and Stickiness: The guilt by association effect of a friend's police contact may be sticky because it stays with the individual for a long period of time, regardless of their own behavior or changes in their friendship with those engaged in delinquency. The idea of stickiness in the criminological literature as referring to a phenomenon that stays with the

individual for a long period of time has been explored previously in the context of one's friendships. Warr (1993) demonstrated that once an adolescent forms friendships with peers who are engaged in delinquency, they continue to keep those types of friendships, even if they do not keep the same friends. Thus, having relationships with others engaged in delinquency may be "sticky" over time. Warr's conceptualization provides a starting point for the research on how key correlates of justice contact may stay with an individual over time (1993). This thesis expands upon this definition by applying the idea of stickiness to the stigma of a friend's police contact.

Some of the contemporary literature suggests that associations with delinquent others may not be as "sticky" as predicted by Warr (1993), however. Despite the possible propensity for one to continue to have these friendships, individual ties with those engaged in delinquency tend to be more unstable than friendships between those who are not involved in delinquency (Marcus, 1996). Dissolving friendship ties is not uncommon for youth with friends involved in delinquency. Friendships between youth are often unstable, especially when the friends are engaged in delinquency (Kreager, Rulison, & Moody, 2011; Rude & Herda, 2010). Research also suggests that co-offending pairs or groups are often transitory; on average, youth co-offend with the same person only once (Reiss & Farrington, 1991; McGloin et al., 2008). In accordance with this pattern, friendships between youth who have had police contact and youth who have not had police contact may be unstable due in part to one's police contact. One mechanism of the instability of these friendship ties is that normative youth may avoid those who have been punished for delinquent behavior (Jacobsen, 2020;

Zhang, 1994). While friendships between youth who are punished may not "stick" for a long period of time, it is possible that the guilt by association effect of a friend's recent police contact persists beyond the length of the friendship.

Prior research has also discussed how stigma from one's justice system involvement stays, or "sticks," with an individual long after the contact occurs (Sampson & Laub, 1997; Uggen & Blahnik, 2016). This stigma may influence one's justice system contact later in life (Chiricos et al., 2007; Liberman, Kirk, & Kim, 2014) and employment and educational opportunities (for employment: Pager, 2003; for education: Stewart & Uggen, 2019). Even police contact that does not result in a criminal record could lead to stigma that sticks over time (Uggen et al., 2014), which suggests that even low-level contact with the justice system could have detrimental effects. While this research is beginning to become robust in the literature, this prior research has all focused on the lasting effects of one's own justice involvement over time. Thus, the current research investigates how the stigma of another's justice involvement could last for a long time. If this effect is "sticky," then it is possible that these individuals may experience the consequences of a friend's recent police contact after it occurs, even if they dissolve the ties with this friend. If youth take steps to avoid stigmatization by dissolving the friendship tie with someone who has experienced police contact, they should no longer be subject to guilt by association. Thus, the second research question asks if dissolving a tie with a friend who has been picked up by police the prior year moderates the relationship between a friend's police contact and one's own contact the subsequent year.

Prior Research and Contributions

Although this research is still in its infancy, some evidence suggests that a guilt by association effect occurs after a friend's punishment. Rocheleau and Chavez (2015) found that youth whose friends were engaged in self-reported delinquent behavior were more likely to receive school sanctions than those who did not have delinquent friends. Additionally, McAra and McVie (2005) found that those who reported that their friends had had any form of earlier contact with the police were more likely to experience police contact themselves between the ages of fourteen and fifteen, even when accounting for their own behavior and status characteristics. However, they found that this guilt by association affected initial police contact but not any formal action by the police, suggesting that this phenomenon matters more at police contact than at other stages of the justice system. The current study expands on the prior research on guilt by association in adolescence by assessing whether a peer's police contact influences an individual's likelihood of being picked up by the police. The current study also expands on prior research examining the guilt by association effect in a rural setting, which is a context that might be particularly conducive to the guilt by association effect.

While this previous research is helpful in establishing that guilt by association can occur in the context of punishment, it remains unclear whether this phenomenon would occur after a more formal sanction, such as being picked up by the police. Additionally, the aforementioned studies examined the association between a friend's punishment or deviance and one's own punishment during two time points. The current study investigates this effect across multiple

years and captures the variation that may occur in the guilt by association effect across adolescence. Furthermore, the current study assesses how this relationship could be mitigated by dissolving a tie with a friend who has recently experienced police contact. This is an important piece that is missing from the current research on guilt by association effects given the evidence of stickiness of labels from one's own justice system contact (Uggen et al., 2014; Uggen & Blahnik, 2016). However, dissolving that friendship tie may be unsuccessful in reducing one's likelihood of police contact if guilt by association is as sticky as one's own deviant label.

The work previously done on guilt by association also focused on contrasting the difference in likelihood of punishment between those whose friends have been punished and those whose friends have not been punished (e.g., McAra & McVie, 2005; Rocheleau & Chavez, 2015). While these between-person effects are important to establish, it remains unclear how a friend's punishment changes one's own likelihood of punishment in the future. The prior work on justice system contact does not definitively conclude that guilt by association would demonstrate solely between-person effects. For instance, Sampson and Laub's (1997) work on cumulative disadvantage highlights the importance of assessing within-individual effects when studying labeling processes. Thus, the current research will use methods that allow for assessing both between- and within-person effects of guilt by association from a friend's police contact by studying the change in the likelihood of police contact for the individual following a friend's contact and comparing individuals who have had friends apprehended to those who have not. The within-individual analysis

assesses the relationship between the year-to-year changes in police contact among a youth's friends, and the youth's own likelihood of police contact. This is done by comparing observations in which youth's friends have had police contact to observations in which their friends have not had police contact. In contrast, the between-individual analysis compares youth who have had a friend picked up by police to youth who have not. If the between-individual associations are statistically significant, then this would suggest that police contact is more likely among youth whose friends have experienced police contact than it is among youth whose friends have not experienced police contact. If the within-individual associations are statistically significant, then this would suggest that youth whose friends experience police contact are more likely to experience police contact themselves after their friends have experienced it. I examine both associations because guilt by association may be present in either. Additionally, between-person analyses on their own cannot account for the potential selection effects of individuals into friendships with others that are more likely to be punished. Using a within-individual analysis controls for time-stable heterogeneity between youth who have friends with police contact and youth who have not. This study cannot assess the causal relationship between a friend's police contact and one's own, but the within-individual analysis and number of control variables included in the present study reduce concerns with selection.

The current study also contributes to labeling theory by incorporating Goffman's (1963) concept of guilt by association into the concept of stickiness already introduced in the criminological literature (Braman, 2014; Uggen et al., 2014; Uggen & Blahnik, 2016; Warr, 1993). First, if the stigma associated with

arrest transfers to one's friends, then it could be said that stigma sticks from one individual to another. Second, if dissolving the friendship tie with this friend does not mitigate this guilt by association effect, then it is possible that the stigma of having a friend who has been arrested sticks with the individual regardless of whether that friendship still exists. If the results of this study suggest that guilt by association is sticky just as one's own stigma is, then this would have troubling implications for the consequences of increased police surveillance and contact in adolescents' lives. Given the negative consequences of early police contact, it is essential to know the ways in which factors other than one's own behavior could affect the likelihood of future police contact. Additionally, the current study explores whether this guilt by association effect continues even if the relationship between an adolescent and their friend who has experienced recent police contact ends. If the guilt by association effect remains even after the dissolution of the friendship tie, then this would suggest that the stigma of affiliating with someone who has had police contact is sticky and cannot easily be remedied. These findings would have troubling implications for the ways in which youth experience police contact and would provide further evidence that the likelihood of justice system involvement is not informed solely by one's behavior.

Chapter 3: Data and Methods

Data

This study utilizes data from the Promoting School-University-Community Partnerships to Enhance Resilience (PROSPER) partnership, a program aimed at preventing adolescent drug use and risky behavior in rural communities. The PROSPER study includes all students within 28 school districts in Iowa and Pennsylvania with enrollment sizes between 1,300 and 5,200 students. The smallest community has fewer than 7,000 residents, and the largest district has slightly fewer than 45,000 residents, which all fit into the definition of rural provided by the Census Bureau (populations less than 50,000 people; Ratcliffe, 2015). The average community in the study had approximately 19,000 residents (Chilenski et al., 2014). Additionally, at least 15 percent of the students in each district must have been eligible for free or reduced-price lunch. Surveys were administered each year from the sixth through the twelfth grades for two cohorts, one beginning in 2002 and the other beginning in 2003. A fall and a spring survey were administered in the sixth grade, and each subsequent survey was administered in the spring of that year (Spoth et al., 2007, 2011). The purpose of the study was to follow the same school districts over a period of seven years. Thus, students entered or exited the survey as they transferred into or out of the school district. While the focus of the study was the prevalence of drug use in these communities, the survey also asked questions about delinquency, police contact, personality and behavior, and status characteristics.

These data are well-suited for this research for several reasons. First, the participants nominated friends within their school, so self-reported police contact from each friend can be obtained. Each year, the participants were asked to nominate up to two best friends and five close friends. The survey specified that the friends they nominate should be in their grade at their school, which means that the friends' self-report data should be available in the dataset. Additionally, the eight waves of the survey were administered over seven consecutive years, which gives multiple time points to assess the guilt by association effect of a friend's police contact on one's own. Finally, the focus on rural communities gives a unique opportunity to study the ways in which close relationships between youth and police could facilitate stigmatization.

The number of youth who completed the survey each year varies; on average, youth answered four out of the seven surveys (approximately 80% of participants (13,000 youth) answered at least two surveys). First, wave 8 (12th grade) had many missing values due to low participation in the survey in some school districts, so that wave was dropped for all students (16,526 individuals). The first wave was also dropped due to the low prevalence of students who were picked up by police (3.34% of the sample; another 16,526 individuals). Because of these exclusion criteria, each wave in the current study represents a grade level (6th-11th grade). Additionally, I drop one school district because they declined to participate in the collection of network data (648 youth). If youth in the first cohort were held back a grade (193 youth), they were added to the second cohort for the remaining years. So as to not affect the social network indicator, the information from when they were in the first cohort were dropped for that student.

The final sample size is 40,743 observations from 12,149 adolescents. The questions from the survey used in the current study are shown in Appendix 1.

As is typical in the criminological field, whether or not youth are missing values for some responses is related to other variables in the model. An analysis was run using a logistic regression to assess missingness and attrition. Overall, as to be expected, participation in delinquency and substance use predicts whether or not one nominated friends or answers questions regarding police contact. Male subjects were more likely to be missing information pertaining to police contact, delinquency and friends than female subjects. Being White decreased the likelihood that one has missing values for any of the questions. Receiving free or reduced lunch also increased one's likelihood of missingness. The existence of a correlation between missingness in surveys of general youth populations and one's characteristics or behavior is typical in criminological studies (e.g., Cernkovich, Giordano, & Pugh, 1985; McGloin, 2009; Reinecke & Weins, 2012). As is also typical in surveys regarding delinquency, attrition in the sample occurs in each grade (e.g., Brame & Piquero, 2003; Thornberry, Bjerregaard, & Miles, 1993). Of the 15,230 subjects who had completed at least one survey, 5,409 (36%) had dropped out of the survey at some point. Attrition from the study occurred primarily because a student transferred out of the school district or dropped out of school, not because they refused to complete the survey. Appendix 2 shows the percent surveys completed by grade as well as a missingness analysis for the key variables.

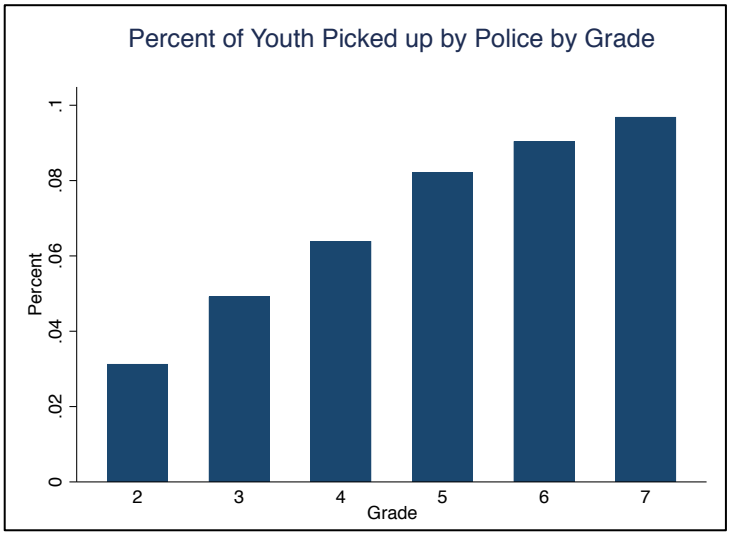
Measures

Dependent Variable

The dependent variable is an indicator of youth-police contact. It is based on the question, "In the past year, how many times have you been picked up by the police for breaking a law?" This may include youth who are arrested and officially booked and youth who are momentarily detained for breaking the law but not brought back to the police station. Using a broader term than arrest in this context is more beneficial because justice system actors in rural areas often use methods of informal rather than formal social control (Feld, 1991). In a rural area, police may be aware of where an adolescent resides and decide to bring them home for minor infractions rather than arrest them (Liederbach & Frank, 2003). Thus, these youth would not be included in official arrest statistics but still experience police contact (Black & Reiss, 1970). This question excludes instances in which youth are picked up by the police for reasons other than breaking the law (e.g., roadside assistance or protection) or are stopped and questioned without being detained. Although the survey question on police contact asks how many times a youth was picked up by police the previous year, a binary variable was created to indicate that the individual was picked up at least once by police during that year. Within a calendar year, youth could have been picked up more than once by the police. However, because initial police contact increases the likelihood of future police contact, it would be possible that subsequent instances of police contact in the same year were due to the stigmatization of one's own police contact and not a friend's contact. By the 11th grade, 10% of participants in the final sample had been picked up by the police at least once during the

previous year. The percent of youth who had been picked up by police each grade is shown in Figure 1.

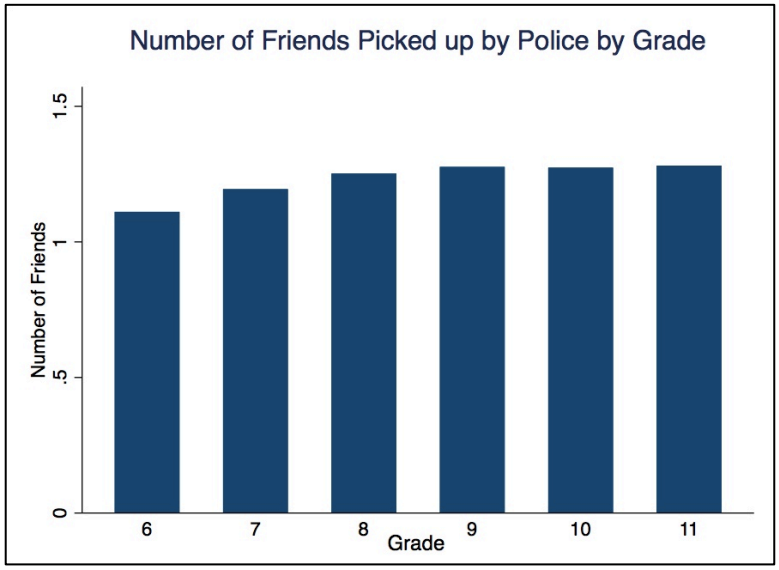
Figure 1: The Percent of Youth Picked up by Police Per Grade



Independent Variable

The primary independent variable is whether or not at least one friend was picked up by police the year prior. Thus, the independent variable is a friend's police contact lagged by one year. In the 11th grade, 17% of youth had at least one friend picked up by police the year prior. The average number of friends picked up by police the prior year was 1.24 (among those who had at least one friend picked up by police). The proportion of a subject's friends who were picked up by police each year is shown in Figure 2.

Figure 2: Number of Friends Picked up by Police by Grade



Moderating Variable: Friendship Dissolution

The second research question asks whether no longer nominating a friend who has been picked up by police as a friend in the following year reduces any guilt by association effect observed in addressing the first question. Friendship dissolution is a binary indicator specifying whether or not all friends who had been picked up by police were dropped as friends. From year to year, one's friendship nominations may change. A best friend may be reassigned as a close friend or a close friend may be reassigned as a best friend. For the purposes of this study, the assignment of "best" versus "close" friend does not matter as much as whether or not they were nominated again in the future. The variable will be equal to one if all friends who were picked up by police the prior year were not nominated the next year. Approximately 59% of students whose friends were picked up by police did not nominate them as friends the next year.

Control Variables

Delinquency and substance use are the primary control variables for accounting for possible selection effects on the relationship between a friend's police contact and the likelihood of one's own. These behaviors are the primary reasons why youth come in contact with police, and youth who select into friendship groups engaged in delinquency or substance use may be more involved with behaviors that could put them at risk of police contact (Haynie & Osgood, 2005). Additionally, these control variables account for possible effect of socializing with those who have been in police contact on the prevalence of delinquency and other deviant behaviors. *Delinquency* is measured as a variety score of several violent and nonviolent delinquency items. The scale is a sum of the following indicators of how many times they had engaged in the following behaviors in the past year: taking something worth less than $25, taking something worth more than $25, beating someone up, purposefully destroyed property, broken into a building, driving under the influence of alcohol, and taking something from a store. *Delinquency* ranges from 0-24, and the average value is 1.53, indicating that delinquency was rare from 7th-11th grade. Each component of the index of delinquency ranges from 0 (Never) to 4 (Five or more times). The Cronbach's alpha value of *delinquency* is 0.84. *Substance use* is a sum of binary variables that indicate whether the person had ever used alcohol, marijuana, or other illicit substances. This measure ranges from 0-8. The average score is 0.9, indicating that substance use was not common in this sample. The Cronbach's alpha value for *substance use* is 0.78. *Prior police contact* is a measure of whether or not youth have ever been picked up by the police prior to

that year. Across years, 8% of youth had been picked up by police prior to their current grade.

An individual's demographic characteristics that could influence the likelihood of police contact independent of a friend's police contact are also included as control variables. *Race* is a binary variable indicating whether or not the participant identified as White or non-White. Because of the nature of the rural sample, the sample sizes of the other race categories[1] (Black, Hispanic, Asian, Native American, or Other) are too small for meaningful analysis, so the model can only analyze the difference between White and non-White individuals. Across years, 84% of the subjects identified as white. *Male* is the binary indicator of gender. Fifty percent of the students in the survey identified as male. Whether or not the student received free or reduced lunch at school is a proxy measure for *socioeconomic status*. Across grades, 41% of students received free or reduced lunch during the school year.

School bonds are measured as the sum of six ordinal variables: "I like school a lot," "I try hard at school," "Grades are very important to me," "School bores me," "I don't feel like I really belong at school," "I feel close to at least one of my teachers," and "I get along well with my teachers." *School bonds* ranges from 0-30, and the average value of *school bonds* is 21.9. Each variable in the index of school bonds ranges from 0 (Never true) to 4 (Always true). The Cronbach's alpha value for *school bonds* is 0.75. The *number of days absent* from

[1] 3.17% of participants identified as Black, 6.9% identified as Hispanic, 0.53% identified as Native American, 1.31% identified as Asian, and 3.85% identified as another race or as being part of multiple race categories.

school is also a measure of school bonds. *Absence* is an ordinal variable ranging from 0-4 in which zero indicates that students missed no days of school and four indicates 16 or more days. The average score for *absence* was three. *Parental supervision* is the sum of five ordinal variables: "During the day, my parents know where I am," "My parents know who I am with when I am away from home," "My parents know when I do something really well at school or someplace else away from home," "My parents know when I get into trouble at school or someplace else away from home," and "My parents know when I do not do things they have asked me to do." *Supervision* ranges from 0-24, and the average value of *supervision* is 17.11. The Cronbach's alpha value for *supervision* is 0.84. Each variable in the index of supervision ranges from 0 (Never) to 4 (Always). These values were reverse-coded from the response values in the survey.

Deviant attitudes are measured as the sum of three ordinal variables of one's attitudes towards whether it is wrong for individuals their age to smoke cigarettes, drink liquor, or use marijuana. The values are reverse coded so that higher values indicate believing that it is not wrong to use these substances. The variable ranges from 0-12, and the average value of deviant attitudes is 5.12. The Cronbach's alpha value for *deviant attitudes* is 0.87. The components of deviant attitudes range from 0 (Very wrong) to 4 (Always wrong). *Sensation seeking* is the sum of three ordinal variables: doing what feels good regardless of the consequences, doing something dangerous because someone dared you, and doing crazy things to see the effect on others. *Sensation seeking* ranges from 0-15, and the average value is 6.59. The Cronbach's alpha value for *sensation seeking* is

0.78. The components of sensation seeking range from 0 (Definitely would not) to 4 (Definitely would). A binary variable for each subject's network is included to account for the possible interdependence of youth who belong to similar networks. A network is comprised of all students in the same cohort within a school district. Separate binary variables for the individual's grade level were included to account for the variation in levels of police contact by grade level. Additionally, a binary variable indicating whether or not the individual had received the PROSPER treatment was included to account for any possible effects of participation in the program on police contact. The final control variable is an indicator of whether or not the adolescent nominated no friends the prior year. Fifteen percent of youth in the final sample did not nominate any friends in the prior year. This allows the reference group to be those who did not have friends picked up by police but did nominate friends as opposed to those who did not have friends picked up by police because they did not nominate any friends. Youth who do not report any friends may differ in their likelihood of being picked up by police than those who nominate friends. The descriptive statistics for the dependent, independent, and control variables by grade are shown in Appendix 3.

Analytic Plan

The equations shown here follow Raudenbush's and Bryk's (2002) suggestion for modeling between-individual and within-individual change. Equations 1-2 show the level-1 or within-individual association between a friend's police contact and one's own police contact, where in Equation 1, η_{ij} is the natural logarithm of the odds of police contact for individual *i* at grade *j*, given

the covariates. π_{0i} is the intercept for the person-grade level. The intercept is the value of the log-odds of being picked up by police when all independent variables are set to 0. Grade serves as an approximation for age and is measured each year. π_{1i} is the value of the coefficient for grade. Friend's PC indicates whether or not a friend was picked up by police each grade and is centered on the cross-grade person-level means, and π_{2i} is the value of the coefficient for friend's PC. $\boldsymbol{x_{ij}}$ is the vector of time-varying control variables measured each grade and includes delinquency, substance use, school bonds, supervision, prior police contact, sensation seeking, deviant attitudes, whether or not they reported friends, and absence, and π_{3i} is the value of the coefficients for those control variables. e_{ij} represents the error term.

$$Logit = \ln\left(\frac{p_{ij}}{(1-p_{ij})}\right) = \eta_{ij} \quad (1)$$

$$\eta_{ij} = \pi_{0i} + \pi_{1i}Grade + \pi_{2i}(Friend's\ PC) + \pi_{3i}\boldsymbol{x_{ij}} + e_{ij} \quad (2)$$

$$\pi_{0i} = \beta_{00}\overline{Friend's\ PC_i} + \beta_{01\ldots k}\boldsymbol{x_i} + \alpha_i \quad (3)$$

$$\pi_{1i} = \beta_{10} \quad (4)$$

$$\pi_{2i} = \beta_{20} \quad (5)$$

$$\pi_{3i} = \beta_{30} \quad (6)$$

Equations 3-6 show the level-2 or between-individual effects of a friend's police contact on one's own police contact. π_{0i} is equal to the effect of the mean value of a friend's police contact over all grades ($\overline{Friend's\ PC_i}$), and the effect of

the time-stable control variables, $\boldsymbol{x_i}$ (race, sex, socioeconomic status, network, and treatment condition). α_i is the individual random effect that is unobserved.

For the second research question, the equation is modified such that π_{2i} represents the coefficient for the mean-centered value of whether or not an individual dropped their friend with police contact. $\overline{Dropped\ PC\ Friend_{ij}}$ represents the mean value for whether or not an individual dropped their friend with police contact across grades. All other elements of equations 1-6 stay the same.

$$\eta_{ij} = \pi_{0i} + \pi_{1i}Grade + \pi_{2i}\left(Dropped\ PC\ Friend_{ij}\right) + \pi_{3i}\boldsymbol{x_{ij}} + e_{ij} \quad (7)$$

$$\pi_{0i} = \beta_{00}\overline{Dropped\ PC\ Friend_{ij}} + \beta_{01\ldots k}\boldsymbol{x_i} + \alpha_i \quad (8)$$

The first model restricts the sample to observations in which a youth has had a friend picked up by police the prior year (n=6,048 person-years) and uses whether or not their friends were dropped as the primary independent variable. The second will compare youth who had had a friend picked up by police and dropped those friends the next year (n = 3,550 person-years) to those who did not have friends picked up by police. The third model compares youth who had friends picked up by police but did not drop them the next year (n = 2,498 person-years) to youth who did not have friends picked up by police. The thresholds for significance will differ by the number of models that are being compared at one time, so Bonferroni corrections will be applied when more than one model is being compared. The base significance level will be a p-value of 0.05. Directly

comparing coefficients between two logistic regressions using traditional methods, such as Paternoster tests, can lead to biased results (Long & Mustillo, 2018). Thus, in order to compare models across groups, I will test the statistical significance of the difference in the predicted probability of being picked up by police for each group using a z-test.

Chapter 4: Results

Descriptive Statistics

Table 1 shows the descriptive statistics for the dependent, independent, and control variables for the spring of 6th grade[2]. Fewer than 5% of values are missing for each variable. In the sixth grade, being picked up by the police is relatively rare; only 3.2% of participants who completed the survey had been picked up by the police at least once during the year. Eight percent of participants had at least one friend who had been picked up by police during the fall of 6th grade. The difference between the percent of individuals who have been picked up by police and the percent of those who have friends who have been picked up by police may be due to repeated nominations of the same individuals who have been picked up by police as friends. Delinquency and substance use were also relatively rare. However, as the youth get older, the likelihood of being picked up by police increases as well as the likelihood of having a friend picked up by police. In the 11th grade, 11% of youth had been picked up by the police and 15% of youth had at least one friend picked up by police the prior year.

[2] These descriptive statistics describe those included in the final analysis sample, not the general population who completed the survey.

Table 1: Descriptive Statistics for the Spring of Sixth Grade[3]

Variable	Mean (SD)	Range
Dependent		
Picked up by Police	0.03 (0.17)	0-1
Independent		
At least one friend	0.08 (0.27)	0-1
Number of friends picked up by police	1.11 (0.36)	0-7
Had ever been picked up by police[4]	0.03 (0.16)	0-1
Moderating		
Dropped friend picked up by police	0.50 (0.50)	0-1
Controls		
Delinquency	0.93 (2.28)	0-24
Substance Use	0.28 (0.76)	0-8
School Bonds	23.20 (4.11)	0-30
Supervision	18.43 (3.28)	0-24
Deviant Attitudes	3.83 (1.68)	0-12
Sensation Seeking	5.84 (2.88)	0-12
White	0.84 (0.36)	0-1
Male	0.50 (0.50)	0-1
FRL	0.42 (0.31)	0-1
Absent	2.84 (0.96)	0-4
Had No Friends	0.17 (0.38)	0-1

[3] Grade and the treatment variable were included in each analysis but are not shown here for parsimony.

4 Although Wave 1 (fall of sixth grade) was not used in the analysis, this variable depends on the fa ll of sixth grade and is shown here for descriptive purposes.

First Question: Guilt by Association

The first set of models in Table 2 establishes the relationship between a friend's police contact and one's own. The first model estimated the association between a friend's police contact and a youth's apprehension with no covariates. Youth who had a friend picked up by police the prior year had over six times greater odds of being picked up by police than those who do not have a friend picked up by police. The within-individual association is also statistically significant. Having a friend picked up by police was associated with an increase in the odds of being picked up by police by 37% compared to years in which they did not have friends picked up by police. When adding in a control for prior police contact, the effect sizes diminished but were still significant. After controlling for prior police contact, having a friend picked up by police was associated with three times greater odds of being picked up by police when compared to those who did not have a friend picked up by police. A friend's police contact was also associated with 14% greater odds of being picked up by police than in years in which they did not have friends with police contact. The next model added in delinquency and substance use, and the effect size for the between-person effect shrunk while the within-person association declined below statistical significance. After controlling for deviant behavior and prior arrest, a friend's police contact was associated with 2.3 times greater odds of one's own police contact when compared to those who have not had a friend picked up by police. Once all covariates were added into the model, the effect size further diminished but the relationship remained statistically significant. After accounting for all observed covariates, the odds ratio of a youth being picked up by police

was 1.93 when compared to those who have not had a friend picked up by police, meaning that the odds of a youth being picked up by police were 93% greater for those who have had a friend picked up by police.

Most of the coefficients for the covariates were statistically significant except for being White and not reporting any friends. The lack of significant differences in police contact for White youth is in contrast to prior studies of juvenile arrest (e.g., Brunson & Miller, 2006), but this result could have been due to the low percent of youth who identified as non-White. Youth who did not report any friends did not have a significantly different likelihood of being picked up by police than youth who had friends without police contact. Prior police contact showed the largest effect size; youth who had been picked up by the police before had almost three times greater odds of being picked up by the police compared to youth without prior police contact, which coincides with prior research (Liberman, Kirk, & Kim, 2014). The following covariates were associated with an increase in one's likelihood of arrest: being male, the likelihood of receiving free or reduced lunch (socioeconomic status), sensation seeking, deviant attitudes, and absence from school. Unsurprisingly, strong bonds to school and supervision are associated with a decrease in the likelihood of arrest. Additionally, the within-individual association between being picked up by police are significant for models that did not include delinquency and substance use. The grade and treatment variables were included in the models, though they are not displayed in Table 2 for parsimony. Neither grade nor whether or not the youth was in the treatment group was significantly related to being picked up by the police when all control variables were included. Grade was significantly

related to being picked up by police when delinquency and prior police contact were not included in the model. The within-individual associations between being picked up by police following a friend's police contact are thus spurious after accounting for one's own behavior that would induce police contact. The between-individual associations, however, were still significant even when controlling for multiple variables that would increase one's likelihood of being picked up by police.

Table 2: Effect of Friends' Police Contact on Likelihood of Contact

Variables	(1) No Controls	(2) Including Prior PC	(3) Including Delinquency	(4) All Controls
Friends' PC (Between)	6.551***	3.009***	2.288***	1.929***
	(0.812)	(0.259)	(0.237)	(0.209)
Friends' PC (Within)	1.371***	1.143*	1.055	1.050
	(0.095)	(0.075)	(0.079)	(0.080)
Prior PC	-	9.485***	3.411***	2.701***
		(0.467)	(0.230)	(0.189)
Delinquency	-	-	1.250***	1.204***
			(0.008)	(0.008)
Substance Use	-	-	1.371***	1.279***
			(0.021)	(0.023)
Male	-	-	-	1.490***
				(0.086)
White	-	-	-	0.926
				(0.071)
Socioeconomic Status	-	-	-	1.679***
				(0.152)
Deviant Attitudes	-	-	-	1.050***
				(0.012)
Sensation Seeking	-	-	-	1.059***
				(0.010)
School Bonds	-	-	-	0.969***
				(0.006)
Supervision	-	-	-	0.964***
				(0.006)
School Absence	-	-	-	1.155***
				(0.031)
Had No Friends	-	-	-	1.008
				(0.072)
Constant	0.018***	0.036***	0.012***	0.022***
	(0.001)	(0.001)	(0.001)	(0.016)
N (person-years)	40743	40743	40743	40743
N (individuals)	12149	12149	12149	12149

Exponentiated coefficients; Standard errors in parentheses

Note: PROSPER Study. The samples for Models 1-3 were reduced to the sample for Model 4 using listwise deletion. PC = Police Contact. Grade and the treatment variable were included in each analysis but are not shown here for parsimony. $^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$

Second Question: Moderation Effect of Dissolving Friendship Ties

The second research question asked whether dissolving the friendship tie with a friend who had been picked up by police attenuates the guilt by association effect of a friend's police contact. The first model restricted the sample to just those who had friends picked up by police the prior year (n = 6,048 person-years) and used whether or not youth had dropped their friends with police contact as the primary independent variable. The average number of observations per individual is smaller for those who have been picked up by police because the average number of years throughout the survey that youth were picked up by police was 1.4. Approximately 59% of those who had friends picked up by police in T1 dissolved the friendship tie in T2. This allowed for a direct comparison between those who had friends picked up by police and kept the friendships to those who had friends picked up by police and dissolved those friendships. There was no direct association between dropping one's friends and the likelihood of being picked up by police for those who had friends picked up by police the prior year.

The second and third models used a friend's police contact as the primary independent variable but used two models to compare those who had not dropped their friends with police contact and those who did not. These subgroup analyses allowed me to assess the moderation effect of dissolving friendship ties on guilt by association by comparing models restricted to those who dropped their friends and those who kept their friends following police contact. The second model removed those who dropped their friends with prior police contact so that those who had friends apprehended by the police and maintained those friendships (n = 2,498 person-years) were compared with those who did not have friends picked

up by police. The third model compared those who dropped their friends with police contact (n = 3,550 person-years) with those who had no friends with police contact. The odds of being picked up by police for youth who had not dropped their friends with police contact were 94% greater than the odds of police contact for those who did not have friends with police contact. The effect size was larger for those who had dropped those friendships. Those adolescents had 96% greater odds of being picked up by the police than those who did not have friends picked up by police. In order to compare these two models, I tested the significance of the difference between the predicted probabilities of being picked up by police for those who dropped their apprehended friends and those who did not. The difference between the two groups was not statistically significant. Although the odds ratio of being picked up by police was higher for those who dropped their friends with police contact, dropping friends who have been picked up by police does not appear to moderate the guilt by association relationship. The covariates maintained the same significance from the model shown in Table 2.

Table 3: Moderation Effect of Dropping Friends with Police Contact on Likelihood of Police Contact

Variables	(1) Effect of Dropping Friends	(2) Those Who Did Not Drop Friends	(3) Those Who Did Drop Friends
Dropped PC Friends (Between)	0.830	-	-
	(0.105)		
Dropped PC Friends (Within)	1.222	-	-
	(0.223)		
PC Friends (Between)	-	1.944***	1.958***
		(0.251)	(0.246)
PC Friends (Within)	-	1.068	0.998
		(0.106)	(0.092)
Prior Police Contact	3.467***	2.820***	2.765***
	(0.399)	(0.206)	(0.204)
Delinquency	1.185***	1.200***	1.208***
	(0.017)	(0.009)	(0.009)
Substance Use	1.248***	1.266***	1.295***
	(0.044)	(0.024)	(0.024)
Male	1.344**	1.445***	1.544***
	(0.152)	(0.088)	(0.094)
White	1.054	0.936	0.885
	(0.167)	(0.076)	(0.071)
Socioeconomic Status	1.992***	1.683***	1.591***
	(0.350)	(0.161)	(0.153)
Deviant Attitudes	1.056*	1.055***	1.043***
	(0.025)	(0.013)	(0.013)
Sensation Seeking	1.015	1.067***	1.060***
	(0.019)	(0.010)	(0.010)
School Bonds	0.969*	0.970***	0.968***
	(0.013)	(0.006)	(0.006)
Supervision	0.963**	0.965***	0.965***
	(0.013)	(0.007)	(0.007)
School Absence	1.164**	1.155***	1.145***
	(0.065)	(0.033)	(0.033)
Did Not Have Friends	1.062	1.021	0.989
	(0.260)	(0.074)	(0.073)
Constant	0.007***	0.026***	0.025***
	(0.011)	(0.020)	(0.009)

N (person-years)	6048	37193	38245
N (individuals)	4247	11926	12017

Exponentiated coefficients; Standard errors in parentheses
Note: PROSPER Study. For the second and third models, the alpha level of 0.05 was reduced to 0.025 using a Bonferroni correction for comparing two models (0.05/2). PC = Police Contacted. The first model is restricted to those who have had friends with police contact. The second model removes those who dropped their police-contacted friends. The third model removes those who did not drop their police-contacted friends. Grade and the treatment variable were included in the models but are not shown here for parsimony.
* $p < 0.025$, ** $p < 0.01$, *** $p < 0.001$

Sensitivity Analyses

The sensitivity analyses further explored the nuances of the guilt by association from a friend's police contact. All the sensitivity analyses provided additional insight as to how guilt by association may influence one's likelihood of being picked up by police and how these associations might differ based on an individual and the circumstances surrounding the friend's police contact.

Dose-Responsive Effects: These analyses tested whether guilt by association is dose-responsive by assessing whether the likelihood of police contact depends on the number of friends who were picked up by police the prior year. An individual could have between zero and seven friends who experienced police contact during the prior year. This analysis was conducted with the sample of those who had friends picked up by police the prior year (n=6,048 person-years) and used the number of friends picked up by police as the primary independent variable. Because having more than one friend picked up by police is not common (approximately 20% of those who had at least one friend with police contact had more than one friend picked up by police the prior year), another analysis was conducted using a binary indicator of whether or not more than one

friend was picked up by police the prior year as the primary independent variable. This, again, used the sample of those who had friends picked up the prior year.

Table 4: The Effect of the Number of Friends Picked up by Police on Likelihood of Police Contact

Variables	(1) Number of Friends with PC	(2) More than One Friend with PC
Number of Friends with PC (Between)	1.297*	-
	(0.140)	
Number of Friends with PC (Within)	0.932	-
	(0.128)	
More than One Friend with PC (Between)	-	1.423*
		(0.213)
More than One Friend with PC (Within)	-	0.817
		(0.166)
Prior Police Contact	3.393***	3.395***
	(0.392)	(0.394)
Delinquency	1.185***	1.186***
	(0.017)	(0.017)
Substance Use	1.247***	1.248***
	(0.044)	(0.044)
Male	1.361**	1.363**
	(0.154)	(0.155)
White	1.063	1.061
	(0.169)	(0.169)
Socioeconomic Status	1.973***	1.959***
	(0.348)	(0.346)
Deviant Attitudes	1.056*	1.056*
	(0.025)	(0.025)
Sensation Seeking	1.014	1.015
	(0.019)	(0.019)
School Bonds	0.968*	0.968*
	(0.012)	(0.012)
Supervision	0.963**	0.962**
	(0.013)	(0.013)
School Absence	1.157**	1.157**
	(0.065)	(0.065)
Did Not Have Friends	1.150	1.153
	(0.283)	(0.285)

Constant	0.005***	0.006***
	(0.007)	(0.009)
N (person-years)	6048	6048
N (individuals)	4247	4247

Exponentiated coefficients; Standard errors in parentheses
Note: PROSPER Study. The alpha level of 0.05 was reduced to 0.025 using a Bonferroni correction for comparing two models (0.05/2). The samples were limited to those who have at least one friend with police contact the prior year. Grade and the treatment variable were included in the models but are not shown here for parsimony. PC = Police Contact.
* $p < 0.025$, ** $p < 0.01$, *** $p < 0.001$

The relationship between having friends picked up by police and one's likelihood of police contact appears to be dose-responsive, which was as predicted. Each additional friend with police contact was associated with an increase in an individual's odds of police contact by 30%. To assess whether there is an independent association between having more than one friend picked up by police and police contact, I ran a model with a binary indicator of having more than one friend picked up by police among those who had at least one friend picked up (n = 6,048 person-years). Having more than one friend picked up by police was associated with an increase in the odds of being picked up by police by 42%. Thus, it appears as though the number of friends who have been picked up by police is associated with one's likelihood of police contact. Additionally, reducing the sample to only those who have had friends picked up by police the year before moved sensation seeking to insignificance. This suggests sensation seeking does not significantly influence the likelihood of police contact among those who already have a friend who has been apprehended by police.

Time Spent with Friends with Police Contact: The next set of analyses tested whether the amount of time spent in unstructured socializing with friends

who have had police contact influences the likelihood of one's own police contact. The relationship between a friend's police contact and one's own was predicted to be stronger if the subject spent more time with friends who experienced police contact. First, for those who had a friend picked up by police (n=5,859 person-years[5]), the effect size of the time spent with that friend was assessed. If more than one friend had been picked up by police, then the friend with whom the most time was spent was considered for this analysis. Second, a binary indicator of whether the individual had spent a lot of time or a little time with a friend with police contact was included as the primary independent variable. A subject spent a lot of time with their friend with police contact if they spent a few times a week or every day in unstructured socializing. A subject spent a little amount of time with their friend who had been picked up by police if they spent once a week, a few times a month, or no time in unstructured socializing with that friend. This analysis also used the sample of those who had friends picked up by police the prior year. The third model compared youth who spent a lot of time with friends who had been picked up by police (n = 2,467 person-years) to those who did not have friends picked up by police. The fourth compared youth who spent a little amount of time with friends who have been picked up by police (n = 3,392 person-years) to those who do not have friends picked up by police.

[5] The sample size of instances in which youth had a friend with police contact was 6,048. Information on the amount of time spent with those friends were missing for 189 cases.

Table 5: The Effect of the Amount of Time Spent with Friends with PC on Likelihood of PC

Variables	(1) Time Spent with PC Friend	(2) Spent a Lot of Time with PC Friend	(3) Effect of PC: Lot of Time	(4) Effect of PC: Little Time
Time with PC Friend (Between)	1.178***	-	-	-
	(0.054)			
Time with PC Friend (Within)	1.050	-	-	-
	(0.078)			
Lot of Time with PC Friend (Between)	-	1.409**	-	-
		(0.174)		
Lot of Time with PC Friend (Within)	-	1.012	-	-
		(0.198)		
Friends' Police Contact (Between)	-	-	2.106***	1.837***
			(0.264)	(0.244)
Friends' Police Contact (Within)	-	-	1.168	0.943
			(0.109)	(0.090)
Prior Police Contact	3.343***	3.385***	2.681***	2.848***
	(0.388)	(0.392)	(0.197)	(0.211)
Delinquency	1.178***	1.178***	1.208***	1.204***
	(0.017)	(0.017)	(0.009)	(0.009)
Substance Use	1.239***	1.241***	1.288***	1.276***
	(0.044)	(0.044)	(0.024)	(0.024)
Male	1.274	1.283	1.524***	1.480***
	(0.144)	(0.145)	(0.093)	(0.091)
White	1.153	1.148	0.923	0.887
	(0.186)	(0.186)	(0.074)	(0.072)
Socioeconomic Status	1.912***	1.917***	1.622***	1.675***
	(0.337)	(0.337)	(0.155)	(0.162)
Deviant Attitudes	1.053	1.054	1.047***	1.052***
	(0.026)	(0.026)	(0.013)	(0.013)
Sensation Seeking	1.015	1.016	1.063***	1.063***
	(0.019)	(0.019)	(0.010)	(0.010)
School Bonds	0.973	0.972	0.971***	0.967***
	(0.012)	(0.012)	(0.006)	(0.006)
Supervision	0.960**	0.960**	0.965***	0.965***
	(0.013)	(0.013)	(0.007)	(0.007)

School Absence	1.160**	1.159**	1.150***	1.150***
	(0.065)	(0.065)	(0.033)	(0.033)
Did Not Have Friends	1.027	1.037	0.994	1.018
	(0.250)	(0.252)	(0.072)	(0.075)
Constant	0.004***	0.005***	0.026***	0.026***
	(0.006)	(0.007)	(0.021)	(0.020)
N (person-years)	5859	5859	37540	38087
N (individuals)	4141	4141	11994	11974

Exponentiated coefficients; Standard errors in parentheses
Note: PROSPER Study. The alpha level of 0.05 was reduced to 0.025 using a Bonferroni correction for comparing two models (0.05/2). PC = Police Contacted. The first two models are restricted to those who have friends with recent police contact. The third model removes those who spent little time with a friend with police contact, and the fourth model removes those who spent a lot of time with a friend with police contact. Grade and the treatment variable were included in the models but are not shown here for parsimony.
* $p < 0.025$, ** $p < 0.01$, *** $p < 0.001$

The first model kept only youth who had a friend picked up the prior year and used the time spent with that friend as the primary independent variable. For this model, the between-individual association was significant. Thus, spending more time with a friend who had been picked up by police was associated with 18% greater odds of police contact than when they spent less time with that friend. Again, the control variables were affected by reducing the sample to those who had had a friend picked up by police. Of the control variables, delinquency, substance use, prior police contact, socioeconomic status, absence from school, and supervision were associated with one's likelihood of police contact.

The next model assessed the difference in the effect of having a friend picked up by police between those who had spent a little time and those who spent a lot of time with that friend. For this model, the between-individual association was significant, but the within-individual association was not. Spending a lot of time with a friend who had been picked up by police was

associated with 41% greater odds of being picked up by police when compared to those who spent a little amount of time with that friend.

The third and fourth models confirmed these findings. The between-person odds-ratio of a friend's police contact was statistically significant for both those who spent a lot and those who spent a little time with friends who had been picked up by police. Spending a lot of time with friends who had been picked up by police was associated with over two times greater odds of being picked up by police when compared to those who did not have a friend picked up by police in the prior year. Spending little time with friends who had been picked up by police was associated with 1.8 times greater odds of being picked up by police when compared to those who did not have friends picked up by police. Additionally, the difference in the predicted probability of being picked up by police for those who spent a lot of time with their apprehended friends and those who spent a little time with those friends was statistically significant ($p < 0.05$). Spending a lot of time with a friend who had been picked up by police was associated with an increase in the likelihood of police contact of 0.3 when compared to those who did not spend a lot of time with those friends. These results coincide with the prediction that guilt by association would be stronger for those who spent more time in unstructured socializing with friends who had been picked up by police. Thus, it appears as though the likelihood of police contact may partially depend on the amount of time spent with a friend who had experienced police contact.

First Reported Instance of Police Contact: This analysis further minimized selection bias by restricting the analysis to only those who had not reported having police contact prior to the current grade (n = 11,511 individuals).

The survey did not ask about police contact before sixth grade, so there could be individuals who were picked up by police prior to sixth grade included in this group. However, these cases are expected to be very rare. Because past police contact is a strong predictor of current police contact (Liberman, Kirk, & Kim, 2014), guilt by association may differ for those who have not experienced police contact before. Should there be an independent association between a friend's police contact and one's own subsequent police contact, then this is evidence that guilt by association is a significant influence in one's likelihood of being picked up by police. This model reanalyzed the same model from the first research question except that the grades after a subject is picked up by police were removed.

Table 6: Effect of Friend's PC on First Instance of Police Contact

Variables	(1) Effect of Friend's Police Contact
Friends' Police Contact (Between)	1.365*
	(0.202)
Friends' Police Contact (Within)	1.256**
	(0.130)
Delinquency	1.252***
	(0.015)
Substance Use	1.416***
	(0.038)
Male	1.601***
	(0.128)
White	1.006
	(0.108)
Socioeconomic Status	1.600***
	(0.201)
Deviant Attitudes	1.064***
	(0.017)
Sensation Seeking	1.071***
	(0.013)
School Bonds	0.967***
	(0.008)
Supervision	0.953***
	(0.009)
School Absence	1.122**
	(0.041)
Did Not Have Friends	0.959
	(0.093)
Constant	0.020***
	(0.033)
N (person-years)	37387
N (individuals)	11511

Exponentiated coefficients; Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Note: PROSPER Study. PC = Police Contact. This model is restricted to those who have not reported prior police contact. Grade and the treatment variable were included in the models but are not shown here for parsimony.

For those who did not report prior police contact, both the between and within-individual associations were significant. Having a friend with police contact was associated with 26% greater odds of being picked up by police for the first time when compared to years in which an individual did not have a friend picked up by police the prior year and 37% greater odds when compared to those who did not have a friend picked up by police the prior year. All covariates, except for being White and not having friends, were significant. When compared to the first model, the effect size of a friend's police contact was larger when all youth were included in the sample (the odds of police contact increased by 93% after a friend's police contact for the general sample). To compare the effect size of a friend's police contact for those who had been picked up by police before to those who had never been picked up by police, I calculated the predicted probability of police contact for those included in the first model and the model in which the subjects had no prior police contact. The predicted probability of police contact for the first model is 2.8% higher than in the model in which no subjects had prior police contact, and this difference was statistically significant. Thus, the relationship between a friend's police contact and one's own contact may be weaker for those who had not experienced prior police contact.

Effects by Other Status Characteristics: Studying how status characteristics affect one's likelihood of police contact is important, even in rural settings, which are perceived to be homogenous. In actuality, minority groups live in rural areas, but these areas are often more segregated than urban areas are (Lichter et al., 2007). Because of this racial segregation, however, disparities by socioeconomic status may be equally or more relevant in rural areas than race.

The potential difference in how status characteristics like race and socioeconomic status affect the likelihood of police contact in rural versus urban areas demonstrate that studying this topic in rural areas is necessary.

The next set of models explored whether characteristics of the individual influence stigmatization. Guilt by association may differ by race, gender, or socioeconomic status because of the disparities in exposure to police contact based on these factors. I ran two different analyses for each status characteristic. One set of models compared White (n = 10,110 individuals) and non-White (n = 2,019 individuals) participants, one set compared male (n = 5,877 individuals) and female (n = 6,272 individuals) participants, and the last compared participants of low (n = 7,511 individuals) and high (n = 4,638 individuals) socioeconomic status. Those of high socioeconomic status had less than a 50% probability of receiving free or reduced lunch at school. I compared the two groups for each status characteristic by testing the statistical significance of the difference of the predicted probabilities of being picked up by the police between the two groups. The models included all the same variables as Model 4 in Table 2.

Table 7: Guilt by Association Effects by Status Characteristics

Variables	(1) White	(2) Non-White	(3) Male	(4) Female	(5) High SES	(6) Low SES
Friends' PC (Between)	2.038***	1.380	1.918***	1.778**	1.841***	2.019***
	(0.245)	(0.337)	(0.260)	(0.328)	(0.277)	(0.319)
Friends' PC (Within)	1.032	1.083	1.000	1.101	0.939	1.233
	(0.084)	(0.227)	(0.100)	(0.130)	(0.093)	(0.147)
Prior Police Contact	2.483***	3.767***	3.231***	1.866***	2.260***	3.359***
	(0.198)	(0.537)	(0.268)	(0.244)	(0.224)	(0.333)
Delinquency	1.195***	1.236***	1.205***	1.208***	1.202***	1.209***
	(0.009)	(0.017)	(0.010)	(0.014)	(0.010)	(0.013)
Substance Use	1.298***	1.222***	1.224***	1.347***	1.262***	1.307***
	(0.026)	(0.049)	(0.029)	(0.038)	(0.029)	(0.037)
Male	1.451***	1.650***	-	-	1.459***	1.500***
	(0.092)	(0.218)			(0.111)	(0.132)
White	-	-	0.838	1.067	0.866	0.924
			(0.082)	(0.134)	(0.102)	(0.094)
Socioeconomic Status	1.721***	1.326	1.709***	1.590**	-	-
	(0.172)	(0.283)	(0.202)	(0.225)		
Deviant Attitudes	1.057***	1.010	1.045**	1.059***	1.060***	1.040
	(0.014)	(0.027)	(0.015)	(0.021)	(0.017)	(0.018)
Sensation Seeking	1.065***	1.031	1.054***	1.065***	1.062***	1.052***
	(0.011)	(0.022)	(0.012)	(0.016)	(0.013)	(0.014)
School Bonds	0.962***	0.994	0.973***	0.962***	0.962***	0.977**
	(0.007)	(0.014)	(0.008)	(0.010)	(0.008)	(0.009)
School Absence	1.138***	1.233***	1.114**	1.218***	1.169***	1.153***
	(0.035)	(0.076)	(0.038)	(0.054)	(0.044)	(0.046)
Had No Friends	0.958	1.241	1.031	0.914	0.836	1.225
	(0.077)	(0.186)	(0.088)	(0.119)	(0.085)	(0.123)
Supervision	0.968***	0.951***	0.964***	0.963***	0.959***	0.971**
	(0.007)	(0.014)	(0.008)	(0.010)	(0.009)	(0.009)
Constant	0.024***	0.015***	0.055***	0.020***	0.013***	0.035***
	(0.022)	(0.019)	(0.056)	(0.020)	(0.016)	(0.032)
N (person-years)	35184	5508	18920	21823	27239	13504
N (individuals)	10110	2019	5877	6272	7511	4638

Exponentiated coefficients; Standard errors in parentheses. * $p < 0.025$, ** $p < 0.01$, *** $p < 0.001$
Note: PROSPER Study. The alpha level of 0.05 was reduced to 0.025 using a Bonferroni correction for comparing two models. Grade and the treatment variable were included in the models but are not shown here for parsimony. SES = socioeconomic status. PC = Police Contact

Race: For White youth, the between-person association between a friend's police contact and their own was significant, but the within-person association was not. The odds of being picked up by police was over two times greater for White youth with at least one friend who had been picked up by police the prior year compared to White youth who had not had a friend picked up by police. The significance of the covariates remained the same as in the model for the first research question. For non-White youth, however, there was no significant association between a friend's police contact and one's likelihood of being picked up by police. Some of the covariates were also not significant for non-White youth. For non-White youth, having been picked up by the police before, gender, delinquency, substance use, absence from school, and supervision were the only covariates that were significantly and positively related to experiencing police contact in the current year. Perhaps non-White youth do not need any more "evidence" of wrongdoing in order to attract attention from the police, while White youth need a reason for the police to be involved in their lives. This could have also been due to the fact that the majority of individuals who completed the surveys identified as White (88%). The other 12% of respondents represented several racial and ethnic groups that have different propensities for police contact. Thus, the lack of a significant association between a friend's police contact and one's own contact for non-White individuals may have been due to the low sample size and heterogeneity of individuals in that group. To assess whether the likelihood of being picked up by police after a friend's police contact differed by racial minority status, the difference in predicted probabilities of being picked up by police after a friend's police contact between White and Non-White youth was

tested. White youth had a lower probability of being picked up by police after a friend's police contact than non-White youth (0.06 and 0.09, respectively), and this difference was statistically significant. Thus, non-White youth have a higher probability of being picked up by police than White youth, but only White youth experienced a significant association between a friend's police contact and one's own.

Gender: For male students, the between-person association was significant, but the within-person association was not significant. Having a friend with police contact was associated with 92% greater odds of being picked up by the police compared to male youth who did not have a friend picked up by police. The between-person association between a friend's police contact and one's own contact was also significant for female youth. Having a friend with police contact was associated an increase in the odds of being picked up by police by 78% for female subjects when compared to female youth who did not have a friend picked up by police the prior year. The effect size may be weaker for female youth because they may be perceived as less delinquent than male youth (e.g., Shedd, 2015). All covariates were significant except for race. The likelihood of police contact for males was 4% greater than for female youth after holding all else constant, and this difference was significant at the 0.05 level. Thus, male youth may be more likely to be picked up by police and may be affected more by guilt by association than female youth, perhaps because they are presumed to be more likely to be involved in delinquency than female youth (Shedd, 2015).

Socioeconomic Status: The last set of models compared youth of high and low socioeconomic status (SES). For youth of high SES (measured as having less

than a 50% chance of being eligible for free or reduced lunch), having a friend who had been picked up by police was associated with an increase in the odds of police contact by 84% compared to youth of high SES who did not had a friend picked up by police. The standard covariates that were significant in the original model maintained their significance for students of high SES. A friend's police contact was associated with an over two times increase in the odds of being picked up by police for youth of low SES compared to youth of low SES who did not have a friend with police contact. The difference in predicted probabilities of police contact between youth of low SES and youth of high SES is 3.4%, and this difference was statistically significant ($p < 0.05$). Thus, youth of low SES may have a higher likelihood of being picked up by police and more strongly affected by guilt by association than youth of higher SES. This result aligns with Chambliss's (1973) observations of the difference in treatment between "saints" (those of higher SES) and "roughnecks" (those of lower SES) by criminal justice agencies and the general public.

Time Since Friend's Police Contact: The final sensitivity analysis tested how long guilt by association lasts by running models that use the time since a friend's police contact as the primary independent variable. These analyses consisted of four separate binary variables that indicated whether the last time a friend had been picked up by police was two, three, four, or five years ago[6]. This sensitivity analysis further tested the concept of stickiness by examining how long

[6] For example, if an adolescent had a friend picked up by police three years ago but not two years ago or the prior year, they would have a value of one for the three-year-prior variable.

the stigma of a friend's police contact continued afterward. I predicted that the effect size of a friend's police contact would be larger for those who had friends picked up by police more recently. This relationship was assessed in two different ways. First, separate models used whether friends were picked up by police two (n = 9,420 individuals), three (n = 7,339 individuals), four (n = 5,310 individuals), and five (n = 3,444 individuals) years prior as the primary independent variable. If the individual had a friend picked up by police more recently, they were removed from the sample[7]. For those models, the reference group was those who did not have friends picked up during that time point. This sample includes only those who had friends picked up by police once during the 7th through 11th grades. Thus, the sample size is smaller than the number of youth who have ever had friends picked up by police (n = 6,048 person-years). The results for this are found in Table 8.

[7] For example, in the model assessing the three-year-prior variable, youth who had friends picked up by police the year prior and two years prior were removed. This is why the sample size decreases as the number of years past since the friend's police contact increases.

Table 8: Guilt by Association Effects by Number of Years Since Friends' PC

Variables	One Year	Two Years	Three Years	Four Years	Five Years
Friends' Police Contact (Between)	1.929***	2.236***	1.703	1.416	1.488
	(0.209)	(0.506)	(0.560)	(0.651)	(0.906)
Friends' Police Contact (Within)	1.050	0.950	1.268	1.091	0.782
	(0.080)	(0.114)	(0.237)	(0.365)	(0.533)
Had No Friends	1.008	0.913	1.004	0.907	0.799
	(0.072)	(0.088)	(0.125)	(0.147)	(0.173)
Prior Police Contact	2.701***	2.553***	2.387***	2.404***	2.696***
	(0.189)	(0.226)	(0.263)	(0.339)	(0.511)
Delinquency	1.204***	1.210***	1.217***	1.242***	1.268***
	(0.008)	(0.011)	(0.014)	(0.020)	(0.031)
Substance Use	1.279***	1.256***	1.314***	1.324***	1.337***
	(0.023)	(0.029)	(0.039)	(0.051)	(0.075)
Male	1.490***	1.510***	1.526***	1.404**	1.267
	(0.086)	(0.113)	(0.145)	(0.173)	(0.217)
White	0.926	0.927	0.913	0.911	0.845
	(0.071)	(0.097)	(0.122)	(0.163)	(0.208)
Socioeconomic Status	1.679***	1.398**	1.499**	1.135	1.211
	(0.152)	(0.166)	(0.229)	(0.231)	(0.344)
Deviant Attitudes	1.050***	1.064***	1.053**	1.043	1.068
	(0.012)	(0.017)	(0.021)	(0.027)	(0.039)
Sensation Seeking	1.059***	1.057***	1.035	1.044	1.045
	(0.010)	(0.013)	(0.016)	(0.021)	(0.030)
School Bonds	0.969***	0.970***	0.976*	0.953***	0.983
	(0.006)	(0.008)	(0.010)	(0.013)	(0.019)
Supervision	0.964***	0.970***	0.965**	1.002	1.012
	(0.006)	(0.009)	(0.011)	(0.015)	(0.021)
School Absence	1.155***	1.130***	1.131**	1.091	1.152
	(0.031)	(0.041)	(0.052)	(0.066)	(0.099)
Treatment Group	1.007	0.961	4.072	5.640	14.90
	(0.642	(0.734)	(4.542)	(7.172)	(40.12)
Constant	0.022***	0.023***	0.006***	0.006***	0.0003***
	(0.016)	(0.019)	(0.007)	(0.008)	(0.001)
N (person-years)	40743	24150	15222	9209	4935
N (individuals)	12149	9420	7339	5310	3444

Exponentiated coefficients; Standard errors in parentheses. * $p < 0.025$, ** $p < 0.01$, *** $p < 0.001$

Note: PROSPER Study. The alpha level of 0.05 was reduced to 0.025 using a Bonferroni correction for comparing two models (0.05/2). Comparison group is the original model from Table 2. It is reprinted in column (1) for reference. PC = Police Contact. The independent variables for Models 2-5 represent friends' police contact two years ago, three years ago, etc and are put in the same row for parsimony. Grade and the treatment variable were included in the models but are not shown here.

Models 2-5 compared youth who had friends picked up by police multiple years prior to youth who had never had a friend picked up by police. Overall, the association between a friend's police contact and one's own contact appeared to be significant solely in the year and two years following a friend's police contact. Interestingly, the effect size appears to be larger for those who had friends picked up by police two years prior when compared to those who had friends picked up by police the year prior. The odds ratio declined below statistical significance when it had been three or more years since the individual had a friend who had been picked up by the police. Thus, guilt by association appears to dissipate a few years after a friend has been picked up by police. Next, I assessed the difference in predicted probabilities between youth who had friends picked up by police the year prior and youth who had friends with police contact in earlier years. Although the effect size for those who had friends picked up by police two years ago was larger than for those with friends picked up the prior year, the probability of being picked up by police was statistically significantly higher for youth who had friends picked up the prior year when compared to those who had friends picked up earlier. These results demonstrate that guilt by association may become less potent as time goes on, which suggests that it may lose its "stickiness" after a few years.

Chapter 5: Discussion and Conclusions

Prior literature has established that a youth's behavior is not the only thing that determines their likelihood of being picked up by police. The aim of this study was to explore whether the likelihood of an adolescent experiencing police contact is associated with a friend's recent police contact. Even when controlling for other covariates that predict one's likelihood of police contact including delinquency, substance use, status characteristics, and other behavior, a friend's police contact was still significantly and positively related to one's likelihood of being picked up by police the following year. By using a mixed-effects logit model, I compared the effect size of guilt by association both between and within the individual. Across models, the between-individual coefficients of a friend's police contact were statistically significant when accounting for all covariates. My findings suggest that youth who have had friends picked up by the police are more likely to experience police contact than youth who have not had friends picked up by police. The within-individual estimation assessed how one's likelihood of being picked up by police differed year-to-year based on whether a friend had been picked up by police the year prior, and this association was significant in the bivariate model and when prior police contact was included in the model. However, the within-individual association was not significant once deviant behavior was taken into account. The only exception was that those who did not have prior police contact experienced both between- and within-individual associations of a friend's police contact on the likelihood of their own police contact. The between-individual associations may suggest lasting stickiness from

a friend's police contact. However, the significance of the between-individual coefficients could also show a dose-responsive relationship between the number of years that an individual has had friends picked up by the police and police contact that was not directly assessed. This result would still support the hypotheses, however, given that the more years in which a youth has friends who have been picked up by police, the more likely they are to be picked up by police themselves. This could be because more instances of a friend's police contact may further increase the likelihood of police surveillance.

The second research question asked whether dissolving a tie with friends who have been picked up by police attenuates the guilt by association relationship. Youth who dissolved friendships with those that had been picked up by police experienced a larger effect size of guilt by association than those who maintained those friendships. However, the difference in the predicted probabilities of being picked up by police between those who dropped their friends with police contact and those who did not was not statistically significant. Thus, dissolving the tie with a friend who has been punished, which the prior literature has demonstrated (Jacobsen, 2020; Zhang, 1994), does not appear to moderate the relationship between a friend's police contact and one's own police contact. These results add nuance to the literature on friendship dynamics following punishment because rejecting friends with police contact may not be a successful mechanism by which to avoid punishment.

Additional analyses explored the nuances of this guilt by association relationship. First, the relationship between a friend's police contact and the likelihood of one's own police contact appears to be dose responsive. This result

aligns with the idea of surveillance as the primary mechanism for guilt by association; police may only know of relationships between adolescents who spend a lot of time together. Having more friends who have been in contact with police may also increase the likelihood that one will be surveilled by the police. This also is an interesting finding in terms of the idea of guilt by association as a status characteristic. Guilt by association may be more dose responsive than other status characteristics such as race, gender, and class.

The next sensitivity analysis explored the relationship between a friend's police contact and an individual's first instance of police contact. There was still a positive association between an adolescent's first police contact and their friend's police contact the prior grade, but the between-person association was weaker for those who had not had prior police contact than for those in the general sample. Having a friend picked up by police does appear to affect one's likelihood of the first instance of police contact compared to years in which they did not have friends picked up by police, which was not the case for those in the general sample. This finding fits in with some of the prior literature that suggests that labeling processes have a stronger effect on those who are least likely to come into police contact, which includes those without prior justice system contact (Chiricos et al., 2007). These findings fit into both the observations of Chiricos and colleagues (2007) and Liberman and colleagues (2014). For those who have not been picked up by police before, the stronger effect size of a friend's police contact may be what increases the within-individual likelihood of the first instance of police contact. However, the likelihood of being picked up by police is stronger for the sample that includes those who have been picked up by police

before. This aligns with Liberman et al.'s findings that prior police contact increases the likelihood of future contact (2014).

The next set of sensitivity analyses explored the effect size of guilt by association by status characteristics. These analyses show that guilt by association associations may not be uniform across demographic groups. Thus, guilt by association could be a status characteristic that interacts with other status characteristics such as race, gender, and socioeconomic status, to predict one's likelihood of justice system contact. The final set of sensitivity analyses focused on the relationship between the time since a friend had been picked up by police and an individual's likelihood of police contact. The guilt by association effect size was only statistically significant in the one and two years following a friend's police contact. Thus, guilt by association appears to dissipate after a few years. This means that guilt by association differs of other status characteristics on justice system contact in that it can both be sticky and diminish over time.

The results of this thesis suggest that the stigma of police contact is sticky in two ways. First, the stigma of police contact sticks from an adolescent to their friend and increases the likelihood that the friend experiences their own police contact. Second, this stigma stays with the individual even if they dissolve the tie with someone who has been picked up by police, though the association appears to dissipate after a few years. This study contributes to the current literature on youth-police contact by demonstrating the detrimental effects of a friend's vicarious police contact and the nuances of guilt by association that have not been adequately explored in the prior literature. This study also contributes to labeling and stigma theories in criminology by providing evidence that a friend's police

contact could be considered a status characteristic that influences the likelihood of justice system involvement and by expanding upon the concept of "stickiness" in the criminological literature. Additionally, guilt by association is a consequence of police contact that should be investigated further. Greater exposure to the justice system from increased police presence in schools and neighborhoods may not only affect those who are picked up by police but also their friends. Thus, this study provides more evidence that police contact can be detrimental to youth.

Limitations

There are a few limitations present in the current study. First, while the rural setting provides an important context in which to study guilt by association, this means that these results may not be generalizable to youth in urban or suburban areas. This is especially important when considering the race effects shown in the results. Unlike other research in this area, race was not significantly related to one's likelihood of police contact in most models (e.g., Brunson & Miller, 2006) as the guilt by association effect was not present for non-White individuals. This could have occurred because there were not many non-White subjects in the sample. Additionally, differences in effects across non-White youth could not be assessed because of the low number of adolescents who identified with non-White racial categories. Police contact may differ across categories of Black, Hispanic, Asian, and other non-White categories, so this non-White group may include both youth who have a larger and smaller likelihood of arrest than White youth. This study would need to be repeated in an urban setting

with a more racially diverse sample to see the true effects of race on guilt by association.

While the "picked up by police" measure may be more inclusive than a measure solely indicating arrest, future studies should use an actual measure of arrest to assess how more formal instances of police contact could be affected by guilt by association. Perhaps youth may be more likely to experience police contact when they have had a friend who has been arrested, but the likelihood of a formal sanction may not be affected. The friendship measure also does not differentiate those who were caught by police for committing the same act at the same time as the individual. Perhaps the effect is most prevalent for those who have been previously detained by police with that friend. The friendship measure also does not account for whether the individual obtained new friends who had police contact that year. That is something to be improved upon in future studies.

Additionally, the year-to-year measures do not allow us to know exactly the processes that occur in predicting a youth's likelihood of police contact after a friend is picked up by police. The lack of within-individual effects could have been due to lack of substantial variation in the number of years in which youth have had friends picked up by police. Sixty-six percent of youth who were picked up by police were only picked up once while participating in the study. The between-individual variation could have been due to an unmeasured dose-responsive effect of the number of years in which a friend has been picked up by police. This study could not test the exact mechanisms of the relationship between a friend's police contact and one's own, though increased surveillance of those with prior police contact and their friends is the hypothesized mechanism.

However, given the control variables that were included in the model and the prior research on police-youth contact, other explanations, such as changes in behavior and one's characteristics, are most likely not the primary mechanism in this relationship.

Future Studies

Given the limited amount of research in the area of guilt by association and transfer of stigma from punishment, there are many opportunities to expand upon this work further. The first steps would be to improve upon the limitations of the current study by replicating it with larger and more diverse samples. Specifically, urban samples are needed to know how applicable guilt by association effects may be in areas in which police may not know the citizens in their jurisdictions as well. However, given the rise in community policing in the past couple of decades (e.g., Reisig, 2010), guilt by association effects may have actually increased in urban areas as officers form stronger and more personal ties with their communities. Additionally, more research into how youth of different races experience guilt by association is needed because of the disproportionate prevalence of police contact among non-White youth, particularly Black and Latinx youth.

Future research could also study the extent to which similarity in status characteristics could drive these guilt by association effects. Youth who are similar in certain demographic characteristics, such as race, gender, and socioeconomic status could be perceived as acting similarly, which may increase the guilt by association effect. Future studies should also assess how guilt by

association may work across different stages of the justice system. Perhaps guilt by association only works during the initial stages of police contact but not further along in the justice system. The majority of studies in this area focus on youth and delinquency, so the research should be expanded to include adults who have committed more serious offenses. Lastly, vicarious police contact through family members may be an important contributor to one's likelihood of police contact, as demonstrated by other studies regarding a family member's justice system contact and one's own punishment (e.g., Jacobsen, 2019). This research should be expanded in the future to include contact experienced by siblings and other close family members. The results of this study do not account for youth whose siblings had been picked up by police would not be included in the sample of youth who experienced vicarious police contact. Lastly, future studies should also look into the possible reciprocal nature of peer police contact and one's own. For example, a friend's police contact may increase one's own likelihood of contact, which would, in turn, increase that friend's likelihood of contact.

Policy Implications

These results have troubling implications for the ways youth are policed, particularly in rural areas in which the police have more familiarity with the individuals in their jurisdictions. Although the exact mechanisms of the guilt by association effect could not be assessed from this study, the prior literature suggests that increased surveillance following police contact may be a potential mechanism in the guilt by association relationship. As evident from this study, police surveillance following a friend's police contact may increase one's

likelihood of police contact, which subjects them to the negative consequences of police contact in adolescence (e.g., Kirk & Sampson, 2013; Wiley, Slocum, & Esbensen, 2013). This study also coincides with other studies of labeling and stigma that suggest that youth-police contact is not solely determined by an adolescent's behavior (e.g., Crutchfield et al., 2009). As can be seen from the results of this study, even when controlling for an adolescent's police contact, delinquency, and other relevant covariates, whether or not a friend has been picked up by police still is significantly related to one's own police contact. Given the negative consequences of police-youth contact and the reasons by which youth come into police contact other than their behavior, policymakers should reconsider whether police should be so heavily present in their lives. Focusing resources on other individuals who can address negative behavior, such as guidance counselors, could be a non-punitive way of protecting youth and the people around them.

Additionally, youth are often told to "not hang around the wrong crowd," which implies that they should end their friendships with those who have experienced police contact. Given what we know about friendship tie dissolution with youth who have been punished (e.g., Jacobsen, 2020), this study explored whether dissolving the tie with a friend who has been picked up by police mitigates guilt by association. Dropping one's friends with police contact did not moderate the relationship between a friend's police contact and one's own, however. Thus, one should be cautious in interpreting these findings to suggest that youth who have been punished should be ostracized by their friends who have not experienced police contact. Pushing youth away from friends not

engaged in delinquency may push them towards others who are engaged in delinquency and away from prosocial opportunities for socializing (Jacobsen, 2020). Thus, adolescents should be encouraged to continue their friendships with their peers who have experienced police contact to show that one should not socially excluded because of their past contact with the criminal justice system. Although youth who have friends involved in delinquency are more likely to be involved in delinquency themselves (e.g., McGloin, 2009), maintaining friendships with those who have not been punished may be a positive influence in the lives of those who have been punished. The potential consequences for youth coming into contact with police and the ways in which that contact is unfairly initiated ultimately calls into question the necessity and benefit of heavy police presence in the lives of today's adolescents.

Appendices

Appendix 1

This appendix lists the questions from the surveys in the PROSPER study that were utilized for this thesis.

Dependent/Primary Independent Variable:

1. *During the past 12 months, how many times have you been picked up by the police for breaking a law?*

Friendship nomination:

1. *Who are your best and closest friends in your grade?*

Control Variables:

Delinquency:

1. *During the past 12 months, how many times have you taken something worth less than $25 that didn't belong to you?*

2. *During the past 12 months, how many times have you taken something worth $25 or more that didn't belong to you?*

3. *During the past 12 months, how many times have you beat up someone or physically fourth with someone because they made you angry (other than just playing around)*

4. *During the past 12 months, how many times have you purposely damaged or destroyed property that did not belong to you?*

5. *During the past 12 months, how many times have you broken into or tried to break into a building just for fun or to look around?*

6. *During the past 12 months, how many times have you taken something from a store that you did not pay for?*

Substance Use:

1. *Have you ever been drunk from drinking alcohol?*

2. *Have you ever smoked a cigarette?*

3. *Have you ever smoked marijuana (grass, pot) or hashish (hash)?*

4. *Have you ever sniffed glue, paint, gas, or other things you inhale to get high?*

5. *Have you ever used methamphetamine (meth)?*

6. *Have you ever used ecstasy (MDMA)?*

7. *Have you ever used drugs or medications that were prescribed by a doctor to someone else?*

8. *Have you ever used Vicodin, Percocet, or Oxycontin?*

Male:

1. *Are you…?*

a. Male

b. Female

White:

1. *Choose the category which best describes you.*

a. Latino/Hispanic

b. Black/African-Am

c. Asian

d. Native Am/Am Ind

e. White

f. Other

Free/Reduced Lunch (proxy for socioeconomic status):

1. *What do you usually do for lunch on school days?*

a. I bring my lunch from home

b. I go home for lunch

c. I receive free lunch from school

d. I buy my lunch at school at a reduced price

e. I buy my lunch at school for the full price

f. I buy my lunch outside of school

g. I don't eat lunch.

Parental Supervision:

1. *During the day, my parents know where I am*

2. *My parents know who I am with when I am away from home*

3. *My parents know when I do something really well at school or someplace else away from home*

4. *My parents know when I get into trouble at school or someplace else away from home*

5. *My parents know when I do not do things they have asked me to do*

Deviant Attitudes:

1. *How wrong do you think it is for someone your age to do any of the following things?*

a. Smoke cigarettes

b. Drink beer, wine, or liquor

c. Use marijuana or pot

Sensation Seeking:

1. *How often do you do the following things?*

a. Do what feels good, regardless of the consequences

b. Do something dangerous because someone dared you to do it

c. Do crazy things just to see the effect on others

School Bonds:

1. *I like school a lot*

2. *I try hard at school*

3. *Grades are very important to me*

4. *School bores me*

5. *I don't feel like I really belong at school*

6. *I feel very close to at least one of my teachers*

7. *I get along well with my teachers*

School Absence:

1. *About how many days were you absent from school last year?*

Appendix 2[8]

This appendix shows the percent of surveys that were completed by grade and the predictors of missingness by status characteristic.

Table 9: Percent of Surveys Completed by Grade

Grade	Percent of Surveys Completed
6 (Fall)	74.01
6 (Spring)	80.73
7	83.08
8	84.96
9	85.55
10	78.46
11	73.71
12	69.54

Table 10: Correlation Between Characteristic and Likelihood of Missing Values

Variables	Police Contact	Delinquency	Substance Use	Friends
Male	+	+	0	+
White	-	-	-	-
Free/Reduced Lunch	+	+	+	+
Delinquency	+	NA	+	+
Substance Use	+	+	NA	+

[8] The missingness analysis was conducted by using a logistic regression to predict which characteristics and behavior predicted the likelihood of missing whether or not one was picked up by police, one's behavior, and friend nominations.

Appendix 3

Table 11: Descriptive Statistics by Grade[9]

Variable	6th (F)	6th (S)	7th	8th	9th	10th	11th	Range
Picked up by Police	0.03 (0.17)	0.03 (0.17)	0.05 (0.22)	0.06 (0.24)	0.08 (0.27)	0.09 (0.29)	0.10 (0.30)	0-1
At least one friend	-	0.08 (0.27)	0.10 (0.30)	0.16 (0.37)	0.18 (0.38)	0.19 (0.39)	0.17 (0.38)	0-1
Number of friends	-	1.19 (0.46)	1.25 (0.53)	1.25 (0.55)	1.25 (0.55)	1.27 (0.57)	1.25 (0.58)	1-7
Ever picked up	-	0.03 (0.16)	0.04 (0.19)	0.07 (0.25)	0.09 (0.29)	0.12 (0.33)	0.16 (0.36)	0-1
Dropped Friend	-	0.50 (0.50)	0.66 (0.47)	0.62 (0.49)	0.63 (0.48)	0.56 (0.50)	0.53 (0.50)	0-1
Delinquency	0.85 (2.07)	0.93 (2.29)	1.23 (2.79)	1.59 (3.35)	1.80 (3.76)	1.82 (3.85)	1.74 (3.86)	0-24
Substance Use	0.21 (0.62)	0.28 (0.76)	0.45 (1.05)	0.70 (1.32)	1.05 (1.60)	1.29 (1.72)	1.55 (1.83)	0-8
School Bonds	23.53 (3.90)	23.20 (4.11)	22.23 (4.43)	21.78 (4.56)	21.36 (4.43)	21.47 (4.34)	21.68 (4.49)	1-31
Supervision	18.73 (3.05)	18.43 (3.28)	17.83 (3.58)	17.68 (3.85)	16.54 (4.00)	16.39 (4.04)	16.21 (4.22)	1-25
Deviant Attitudes	3.74 (1.75)	3.84 (1.68)	4.30 (2.01)	4.76 (2.28)	5.48 (2.54)	5.89 (2.66)	6.38 (2.72)	1-12
Sensation Seeking	5.80 (2.77)	5.84 (2.88)	6.35 (2.97)	6.67 (3.03)	6.91 (3.03)	6.95 (3.00)	6.76 (2.95)	1-15
White	0.84 (0.36)	0.84 (0.36)	0.84 (0.36)	0.84 (0.36)	0.84 (0.36)	0.84 (0.36)	0.84 (0.36)	0-1
Male	0.50 (0.50)	0.50 (0.50)	0.50 (0.50)	0.50 (0.50)	0.50 (0.50)	0.50 (0.50)	0.50 (0.50)	0-1
FRL	0.44 (0.31)	0.42 (0.31)	0.41 (0.31)	0.41 (0.30)	0.41 (0.30)	0.40 (0.29)	0.39 (0.29)	0-1
Absent	2.73 (0.98)	2.84 (0.96)	2.91 (0.98)	3.03 (0.98)	3.04 (1.00)	3.04 (1.02)	3.09 (0.98)	1-5
No Friends	-	0.17 (0.38)	0.13 (0.33)	0.11 (0.32)	0.12 (0.32)	0.17 (0.37)	0.22 (0.42)	0-1

[9]Mean (SD). Descriptive statistics from analytic sample (N = 12,149 individuals). Grade and the treatment variable were included in the models but are not shown here for parsimony.

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